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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,626	01/17/2002	Naoki Matsushima	16869N-040600US	3103

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EXAMINER

LEE, HWA S

ART UNIT PAPER NUMBER

2877

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,626

Applicant(s)

MATSUSHIMA ET AL.

Examiner

Andrew H. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION***Claim Rejections - 35 USC § 103***

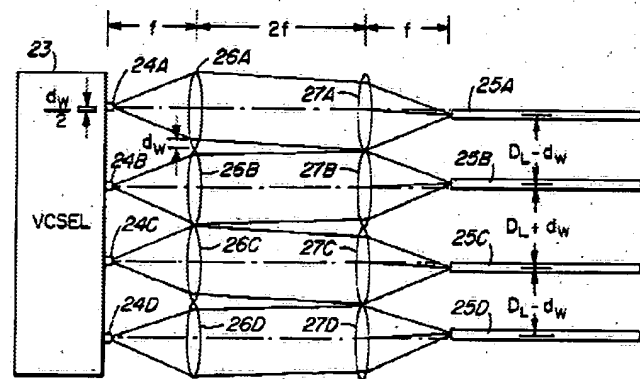
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson et al (US 5,857,042).

Robertson et al (Robertson hereinafter) show an optical interconnection arrangement comprising:

- a light emitting element (23);
- an optical fiber (25A);
- a first lens (26A) for collimating light from the light emitting element; and
- a second lens (27A) for focusing said collimated light to said optical fiber;



wherein when a focal length of said first lens is designated by a notation f_1 and a focal length of said second lens is designated by a notation f_2 , said first lens and said second lens are arranged such that an optical distance d between a principal plane of a side of said first lens proximate to said second lens and a principal plane of a side of said second lens proximate to said first lens satisfies $|d - (f_1 + f_2)| \leq 5 \times f_1$.

Although Robertson does not expressly show that relationship of the focal lengths, Robertson shows in Figure 8 that d is approximately equal to $2f$, $f_1 = f$, and $f_2 = f$, therefore:

for claim 1: $|d-(f_1+f_2)| \leq 5 \times f_1$,

for claim 2: $d = f_1 + f_2$,

for claim 3: $|d-(f_1+f_2)| \leq 5 \times f_1$.

3. **Claims 6-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson as applied to claims 1-3 above further in view of Tabuchi et al (US 5,757,999).

Robertson only shows a schematic drawing of the system and does not expressly show the details of the structure such as the passive alignment, the groove on the silicon board, and the isolator.

Tabuchi shows a hybrid integrated circuit having passive alignment grooves in a silicon board and an isolator. At the time of the invention, one of ordinary skill in the art would have used the grooves for aligning and holding the optical elements in order to hold and keep the elements in alignment and an isolator to prevent light from reflecting back into the diode.

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4. **Claims 12 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson as applied to claims 1 and 2 above, and further in view of Miyamoto et al (US 6,679,635).

Robertson does not show the power output of the laser.

Miyamoto shows an optical device permitting passive alignment of a lens element wherein the power output of the laser is smaller than 10 mW (column 5, lines 24+).

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At the time of the invention, one of ordinary skill in the art would have used a laser having a power output smaller than 10 mW in order to evaluate the optical device.

5. **Claims 14-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson and Miyamoto as applied to claims 12 and 13 above, and further in view of Ichino et al (6,155,724).

Robertson and Miyamoto do not show the transmission capacity of an optical fiber network that the optical module is connected to.

Ichino shows an optical fiber network having a transmission capacity of 10 Gbits/s.

At the time of the invention, one of ordinary skill in the art would have connected the optical module to the optical fiber network of Ichino in order to have system having a high transmission capacity.

Allowable Subject Matter

6. **Claims 4 and 5** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to show an optical transmission module comprising of all the elements as presently claimed having $|d-(f_1+f_2)| \leq 5 \times f_1$ or $d = f_1 + f_2$ wherein f_2/f_1 is greater than or equal to 5.

Papers related to this application may be submitted to Technology Center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the PTO Fax Center located in

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CP4-4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Center number is 703-872-9306 for regular communications and for After Final communications.

If the Applicant wishes to send a Fax dealing with either a Proposed Amendment or for discussion for a phone interview then the fax should:

- a) Contain either the statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax Cover Sheet; and
- b) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa Lee whose telephone number is (571) 272-2419.

The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415.



Andrew Lee
Patent Examiner
Art Unit 2877

May 6, 2004/ahl